In the Claims:

Please amend the claims as follows:

1-21 (cancelled)

22. (currently amended) A method for manufacturing paper, comprising:

producing a paper pulp as follows:

providing a precipitation reactor;

providing a fiber material comprising fibers to be used as a raw material for the paper pulp, the fibers in the fiber material having a certain capacity for bonding;

providing a reactive mineral material;

providing a gas containing a precipitant capable of precipitating the reactive mineral material;

providing an activation zone in front of the precipitation reactor or inside the precipitation reactor;

combining the reactive mineral material and the fiber material to form a fiber suspension;

activating the fiber suspension in the activation zone in order to enhance the capacity of the fibers for bonding;

feeding the gas comprising the precipitant inside the precipitation reactor in order to form a gas space inside the precipitation reactor;

dispersing the fiber suspension in drops or particles into the gas space of the precipitation reactor;

bringing the dispersed and activated fiber suspension into contact with the precipitant of the reactive mineral material in the gas space of the precipitation reactor at the flow rate higher than the flow rate of the fiber suspension being fed into the precipitation reactor in order to at least partly precipitate the reactive mineral material, whereby at least some of the thus formed precipitated mineral material is precipitated onto the fibers; and

discharging the treated fiber suspension from the precipitation reactor;

feeding the paper pulp containing precipitated mineral material at a predetermined consistency into a forming section of a paper machine;

removing water from the paper pulp by allowing the pulp to drain through a water permeable forming base; and

drying and finishing the paper web thus produced in order to produce a finished paper product.

23. (previously presented) The method according to claim 22, wherein the reactive mineral material is calcium hydroxide ($Ca(OH)_2$).

24. (previously presented) The method according to claim 22, wherein the precipitant is carbon dioxide.

25. (previously presented) The method according to claim 22, wherein in order to

activate the fiber suspension the activating methods are selected from forces exerted to the fiber suspension or chemically activating the surfaces of the fibers comprising forming active OH-groups on the surfaces of the fibers, the forces comprising repeated impacts, counter impacts shearing forces, turbulence, over-pressure pulses or under-pressure pulses which forces mechanically activate the fibers by fibrillating or grinding the fibers or by opening the inner parts (lumen) of the fibers to the mineral material.

26. (previously amended) The method according to claim 24, wherein the fiber suspension flow flowing through the activation zone is subjected to repeated impacts and counter impacts created in the fiber suspension flow by blades moving at 5-250 m/s.

27. (previously amended) The method according to claim 24, wherein in the activation zone of the precipitation reactor, there is an impact mill- type flow-through mixer, which has concentric cages provided with blades, of which cages at least every other cage functions as a rotor, and the cages adjacent to said cages function as stators or rotors, the speed difference of the adjacent cages being 10-500 m/s, and wherein the fiber suspension is fed through the flow-through mixer and radially outwards from cage centers, as the blades on the cages bring repeated impacts, counter impacts, shearing forces and turbulence and/or over- and under-pressure pulses, which together activate the fibers, to bear on the outward flowing fiber suspension.

28. (previously amended) The method according to claim 27, wherein at least part of the gas to be fed into the precipitation reactor, containing the precipitant for precipitating the mineral material, is fed into the reactor through the activation zone, enabling the fibers activated in this

activation zone to come into contact with said precipitant immediately during the activation or directly after the activation.

29. (previously presented) The method according to claim 24, wherein the residence time of the suspension containing the fiber material and the reactive mineral material in the activation zone is under 1 second.

30. (currently amended) The method according to claim 22, wherein ~~a gas containing more than 10% of the precipitant is fed into the precipitation reactor~~ the size of the liquid drops is less than 1mm.

31. (previously amended) The method according to claim 22, wherein the gas containing the precipitant is pure or nearly pure carbon dioxide, flue gas or another carbon dioxide-containing gas, or contains other gas suitable for precipitating the mineral material used, or is a mixture of these gases, and the gas containing the precipitant is fed into the precipitation reactor in such a manner that the gas will create an over-pressure in the reactor.

32. (previously presented) The method according to claim 22, wherein the fiber suspension is taken through two or more precipitation reactors connected in series.

33. (previously presented) The method according to claim 22, wherein the reactive mineral material comprises calcium hydroxide, calcium sulphate, calcium oxide, some other reactive material suitable for the purpose and precipitable with the precipitant and/or a mixture of

these, and wherein the reactive mineral material is chosen according the desired quality of the product.

34. (previously presented) The method according to claim 22, wherein the fiber material comprises:

primary fiber obtained from chemical, mechanical, chemimechanical, thermomechanical, semichemical or other corresponding processes,

de-inked or non-de-inked recycled fiber obtained from newsprint, kraft paper, tissue paper, special paper or paperboard, fiber from machine broke or other corresponding fiber, or

bleached or non- bleached fiber, ground or non-ground fiber, dried or nondried fiber, or a mixture of these.

35. (previously presented) The method according to claim 22, wherein the fiber material contains in addition to fine substances impurities and/or mineral materials.

36. (previously presented) The method according to claim 22, wherein the fiber material is fed to the precipitation reactor at a consistency of from 3 to 7%.

37. (currently amended) A method for manufacturing paper, comprising:

producing a paper pulp as follows:

providing a precipitation reactor;

providing a fiber material comprising fibers to be used as a raw material for the paper pulp, the fibers in the fiber material having a certain capacity for

bonding;

providing a reactive mineral material;

providing a gas containing a precipitant capable for precipitating the reactive mineral material;

providing a flow-through mixer operating by the impact mill principle in front of the precipitation reactor or inside the precipitation reactor, the flow-through mixer comprising concentric cages provided with blades of which at least every other cage functions as a rotor, and the cages adjacent to the mentioned cages function as stators or rotors, the speed difference of the adjacent cages being 10-500 m/s; feeding apparatus for feeding the fiber material mainly into the center of the cages; and an open outer cage that allows the fiber suspension to flow radially outwards through the cages to exit the cage in different directions, or an outer cage that is provided with one or more outlets in order to discharge the fiber suspension flowing radially outwards from the cages;

combining the reactive mineral material and the fiber material to form a fiber suspension;

activating the fiber suspension in the flow-through mixer in order to enhance the capacity of the fibers for bonding;

feeding the gas comprising the precipitant inside the precipitation reactor in order to form a gas space inside the precipitation reactor;

dispersing the fiber suspension in drops or particles into the gas space of the precipitation reactor;

bringing the dispersed and activated fiber suspension into contact with the

precipitant of the reactive mineral material in the gas space of the precipitation reactor <u>at the flow rate higher than the flow rate of the fiber suspension being fed into the precipitation reactor</u> in order to at least partly precipitate the reactive mineral material, whereby at least some of the thus formed precipitated mineral material is precipitated onto the fibers; and

discharging the treated fiber suspension from the precipitation reactor;

feeding the paper pulp containing precipitated mineral material at a predetermined consistency into a forming section of a paper machine;

removing water from the paper pulp by allowing the pulp to drain through a water permeable forming base; and

drying and finishing the paper web thus produced in order to produce a finished paper product.

38. (previously presented) The method according to claim 37, wherein the activation is performed while the fibers are swollen due to adding of calcium hydroxide ($Ca(OH)_2$).

39. (previously presented) The method according to claim 37, wherein in the paper pulp is added at least 20 wt% of nano-sized filler particles in relation to the total weight of the pretreated fiber.

40. (previously presented) The method according to claim 39, wherein the nano-sized filler particles comprise precipitated calcium carbonate.

41. (previously presented) The method according to claim 37, wherein the paper web is sized with wet end size.

42. (previously presented) The method according to claim 37, wherein the paper web is calendered.

43. (previously presented) The method according to claim 37, wherein the paper web is coated.

44. (previously presented) The method according to claim 27, wherein the speed difference of the adjacent cages is 50-200 m/s.